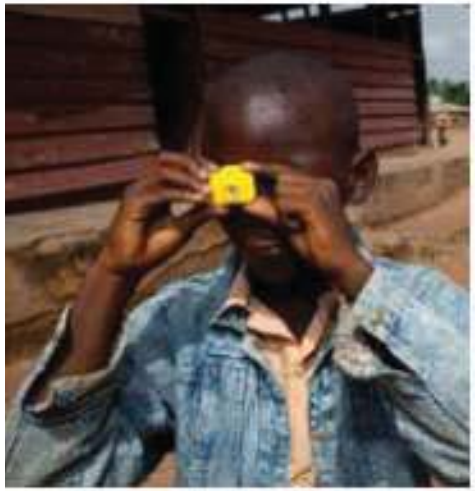







What Have We Learned About Improving Learning?



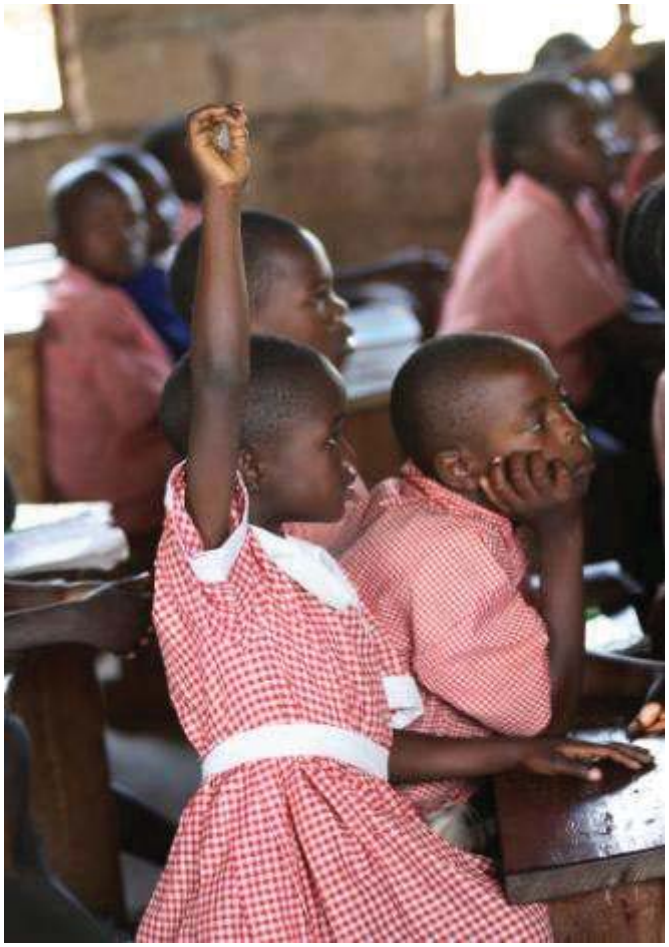



Background

- Across the developing world, dramatic increases in access to primary schooling
- Yet being in school does not seem to imply that children are learning
  - UWEZO results
  - ASER results
- A majority of children are reading and doing math much below grade level.
- Which means that most fourth and fifth graders cannot actually relate to what is being done in class

What Could be the Problem?

- Lack of inputs (textbooks, etc.)
- Shortage of teachers
- Teaching/pedagogy
- Lack of demand
- Distorted beliefs



Evidence on Inputs

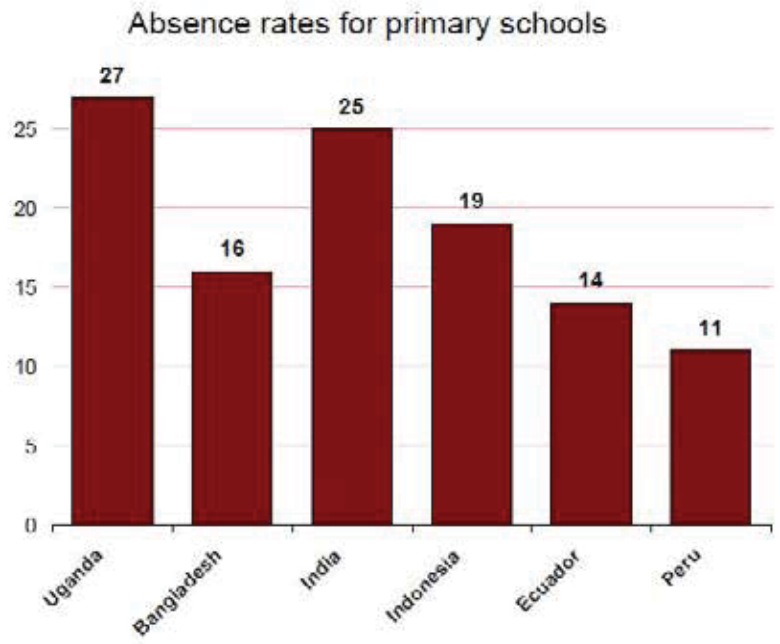
- Multiple studies by Kremer et al. in Kenya
- Essentially none found any impact
- Limited exception: textbooks matter for the best performing children
- On the other hand, access to school definitely matters (e.g. Linden on village-based schools in Afghanistan)

Evidence on Student-Teacher Ratio

- Very little evidence of a positive effect
- Early RCT in Udaipur (Banerjee, Kremer, Jacob)
  - 20 randomly selected schools received extra teacher
  - School attendance went up, test scores unchanged
- Balsakhi Programme in Mumbai and Vadodara (Banerjee et al.)
  - Pull-out programme for remedial education
  - No improvement in those predicted to be left behind
- Similar results in Kenya (Duflo, Dupas, Kremer)

Teachers

- High absence rates documented in many countries (World Absenteeism Survey)
- Even when present, teachers often not teaching



Teacher Incentives

- Attendance based incentives in Rajasthan improved test scores by 0.2 sd
- Andhra Pradesh: small bonus (~3% annual salary) for improvement in classroom-level or school-level test scores (Muralidharan and Sundararaman)
- After 2 years, increase of 0.27 s.d. in individual incentive schools, 0.16 s.d. in group incentive schools
- No increase in attendance- channel was more teacher effort

Pedagogy: Remedial Teaching

- Balsakhi Programme mentioned earlier
- High school-educated local tutors, paid 1000 Rs/month
- Large effects on test scores of lowest performing children: 0.6 s.d. after two years

Pedagogy: Remedial Teaching

- Learning to Read
  - 15 percent of children age 7-14 could not recognize a letter; 39 percent could not read a Grade 1 level story
  - Pratham recruited volunteers to teach evening classes for 2 months
  - Child who could read a letter at baseline were 26 percentage points more likely to read and understand a story compared to control
  - Similar results in Bihar from program of after-school volunteers: very large gains even for children who could already read and write

Government schools

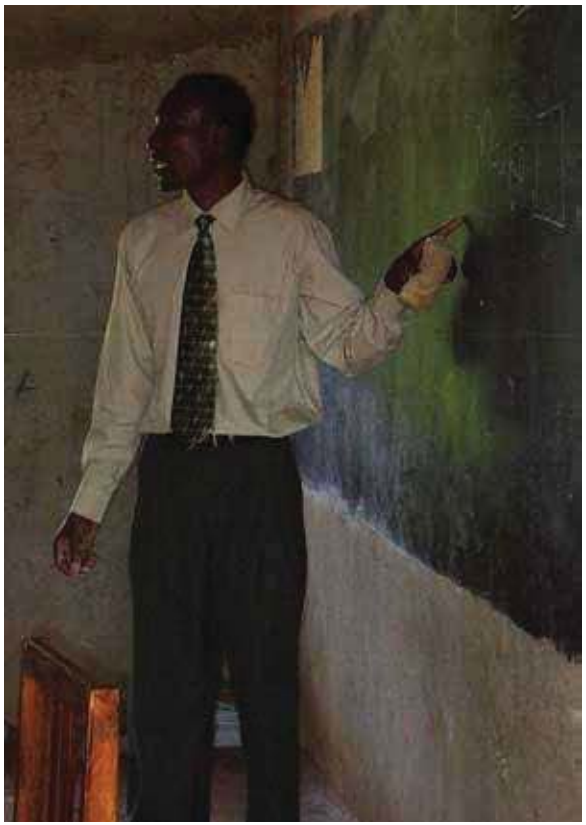
- Pratham trained government teachers in the same pedagogy that they trained the volunteers
- Very large gains (1 sd) when these teachers taught summer school
- Zero gains when they taught regular schools

Computer-Assisted Learning

- Somewhat mixed results
- Pratham CAL programme: 0.36 s.d. improvement in math scores.
- Gyan Shala project in India suggests context matters
  - Math scores improved (0.28 s.d.) for students in after-school programme, decreased (- 0.55 s.d.) for students in "pull-out" programme that replaced classroom instruction (Linden)
- Key issues seem to be student ability level, structured curriculum vs. "freedom"

Tracking

- Schools in Kenya: huge class sizes
- Extra local teachers hired
  - Some randomly chosen classes split based on past student performance
  - Others divided randomly
  - Children in both tracked classes did better at all points in the distribution (0.2 s.d.)

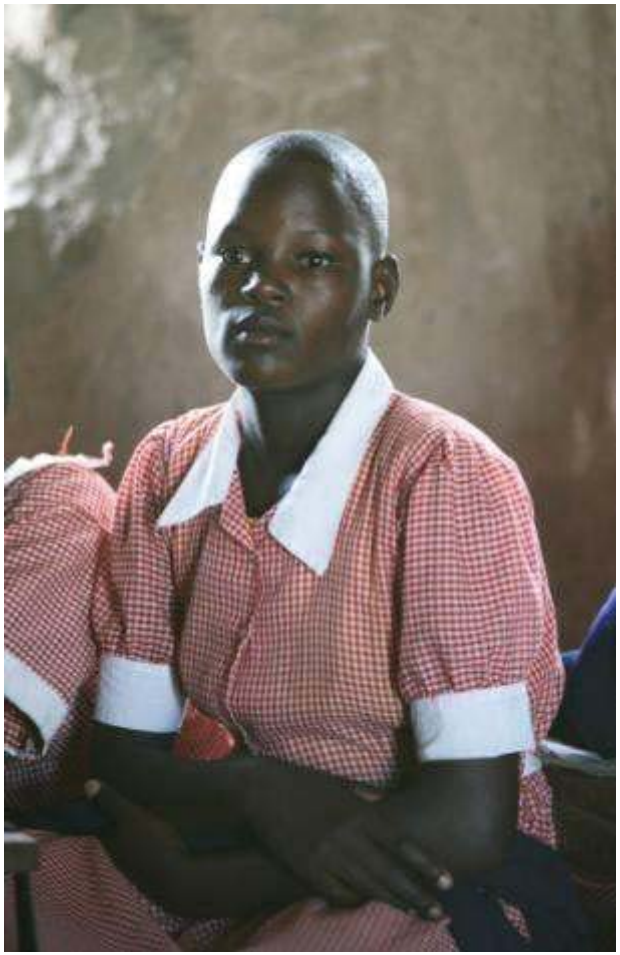


Demand

- Some evidence of low parent/child motivation
- Child attendance rates in ASER around 70 percent on days when school is open
- If you are totally lost in class, hard to be motivated
- Jaunpur programme: only 8 percent of children attended camp
- No evidence that “school report cards” make any difference

Direct Evidence on Demand Effects

- Girls Scholarships in Kenya (Kremer, Miguel, and Thornton)
  - $20 scholarship for girls in the top 15 percent of test scores
  - Effect of 0.2 s.d. on girls
  - Increase in teacher effort
  - Effect of 0.1 s.d. on boys and girls unlikely to win prize



Information and Demand

- In Dominican Republic, perceived returns to schooling very low despite higher measured returns; students given information on returns completed more schooling (Jensen)
- Information for parents on average return to education in Madagascar (Nguyen)
  - 0.2 s.d. gain in test scores overall
  - 0.4 among parents who underestimated returns

Can we fix everything by fixing demand?

- One way to look at this is children who go to private schools (demand-driven)
- Controlling for family fixed effects, private school children still do better (Desai et al):
  - +0.31 s.d. for reading
  - +0.22 s.d. for arithmetic
- Probably some self-selection in that since parents discriminate
- No clear gains from private school vouchers in India

On the Other Hand…

- Much bigger effects from pedagogical interventions
  - In other words, private school teaching is much less effective, at least in improving the performance of the weakest children, than these often brief interventions by motivated but poorly trained teachers
- Suggests that demand is not the only problem
- What could be going on?

What Could Be Going On: Hypotheses

- The universally shared (public/private) pedagogy is grossly inappropriate
- Based on covering material rather than learning

Why would this happen: A hypothesis

- Parents (incorrectly) see schooling as a lottery with long odds
  - A few children will graduate and get a good job. The rest get nothing.
- If this is true then it is very important to cover the entire syllabus
- And if that means going very fast then most children will just have to be ignored.
  - kids who miss something early on never catch up. Everyone decides they are stupid, gives up.
- Just not true: gains seems to be there for everyone—not just those who graduate

What Could Be Going On: Hypotheses

- This helps explain:
  - Why being in school generates learning but decreasing student-teacher ratios does not
  - Why textbooks only work for the best children
  - Why remedial education is so effective
  - Why tracking works
  - Why government teachers perform so differently in summer schools
  - Why (accurate) information on returns to schooling increases attendance and test scores

Policy Lessons

- Need to focus on basic skills: commit to the idea that every child can master them as long as she, and her teacher, expends enough effort on it
- Remedial teachers can be effective with relatively little training, at least in lower grades

Policy Lessons, continued

- Large potential gains from reorganizing curricula and classrooms to allow children to learn at their own pace
  - Technology has potential here
- Change unrealistic expectations about what education delivers
  - e.g. Information campaigns
- Set more proximate goals for children and teachers
  - e.g. Year-to-year scholarships

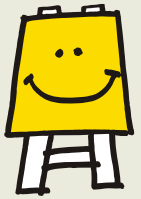
Learning by Doing

A Pratham experience

Accra, Ghana

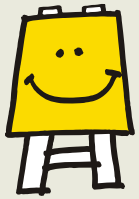
May 14th, 15th 2012

Content



- Facts viz a viz desired levels
- Gathering evidence
- Remedial intervention with acceleration
- Evaluation
- L2R: Our first innovation
- 'Purroh" Punjab (Read Punjab)
- From L2R to R2L
- Other innovations
- In conclusion

Facts viz a viz Desired Levels: Status of Education in India



Facts:*

- Std. II: 15% children are at 'nothing' level. 13.7 % children can solve subtraction sum
- Std. III: 23.2% children can solve subtraction sums
- Std. V: 27.6% children can solve division sums

Desired Levels:*

- All children should be able to:
  - Solve simple addition/subtraction and know multiplication tables of 2,3,4 and 10 in Std. II
  - Solve multiplication and division word sums. Introduction of fraction and comparison and simple operations in Std. III
  - Solve word problems and unitary method, equivalent fractions and its all their operations. Introduction of decimals and its operations in Std V

Facts:*

- Std. II: 16.6% children are at 'nothing' level and 8.7% can read std. II level text
- Std. III: 18.8% children can read std. II level text
- Std. V: 48.2% children can read std. II level text

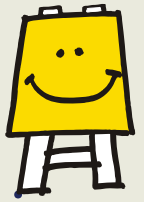
* Source: ASER 2011

Desired Levels:*

- All children should be able to:
  - Std. II: Read fluently the text - grade appropriate phonics and words
  - Std. III: Read the text with accuracy, fluency and understanding. Show writing skills with reading comprehension
  - Std V: Summarize text, share critical thinking, create a piece of independent writing

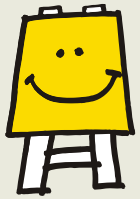
* Source: State text books (Maharashtra)

Gathering Evidence



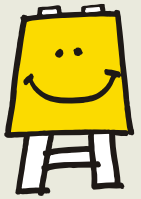
1. Started teaching in government schools using prescribed text books
2. Identified issues of non learning
   - Children's level much lower than expected
   - "One size fits all method" will not work
   - Poor language development: Vocabulary, Grammar
   - Delinking between teachers and students
     - Focus is on rote learning, memorization and copy writing
     - Ignorance about children's strengths and needs
     - Colloquial v/s formal language – use of dialects
3. **Our learning:**
   - **Need to understand 'what' is missing, 'why' is missing - - focus on the issue of 'literacy' and 'numeracy'**
   - **Need for large scale intervention**

Remedial intervention with acceleration



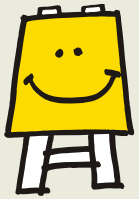
1. Why remedial intervention?
   - 'All pass policy' – children promoted to higher grades without acquiring basic 'literacy' and 'numeracy' skills
2. Why acceleration?
   - To create time-bound program to mainstream children with rest of the class
3. **Our learning:**
   - **Evidence should not only be used to prove a point.**
   - **It has to be used to learn.**

Evaluation



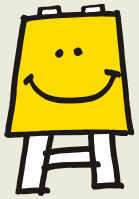
1. To establish link between goals and outcomes
   - Needs disciplined approach
   - Long-term partnership with the 'evaluator"
2. Partnership with J-Pal since 1999
   - Balsakhi program
3. **Our Learning:**
   - **Demystification of evaluation**
     - **It is not just a monopoly of "policy makers", "researchers", "educationists" and "experts"**

L2R: Our first innovation



1. Highlights
   - Testing: Group children by levels
   - Speed: From 'nothing' to 'paragraph' reading in 45 days
   - Simplicity: Easy implementation through untrained young volunteers
   - Scalability : partnership with local governments
   - Innovative teaching learning material: Development and use of target oriented material
   - Cost effectiveness
2. **Our learning**
   - **ASER tool for quantifying the issue of quality of education**
   - **Established the path between practice and theory**
   - **Taking the impact of intervention to the society: involved common people in witnessing the change**

Example :
Purrho Punjab : Clear set of basic learning goals



Assumption: Teaching by grade level is best thing to do

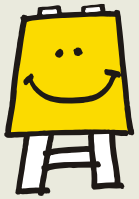
Reality: Re-grouping children by level accelerated learning

For 2 hours a day, primary school was reorganized – from grade wise grouping to level wise grouping. Each group was called "mahal (a palace) ".

All training, materials, monitoring aligned to support the achievement of basic learning goals.

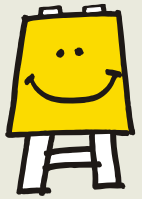
% Children in govt schools in Std 5 who can do division			
Std 5	ASER 2008	ASER 2009	ASER 2010
Punjab	39.7	48.6	70.8
All India	34.4	36.1	33.5
Kerala	38.3	36.4	43.1

From L2R to R2L



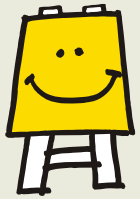
1. Why Reading to Learn?
   - Go beyond basic literacy for seamless mainstreaming at the grade appropriate level: 'listening' and 'speaking' skills play important role
   - Develop comprehension
   - Give a method of self study with peer learning
   - Children overcome inhibitions when they are allowed to use colloquial language.
2. **Our learning:**
   - **Learning: a continuous process**
   - **Existing theories: can be understood better**
   - **Scope to create own theory based on evidence**

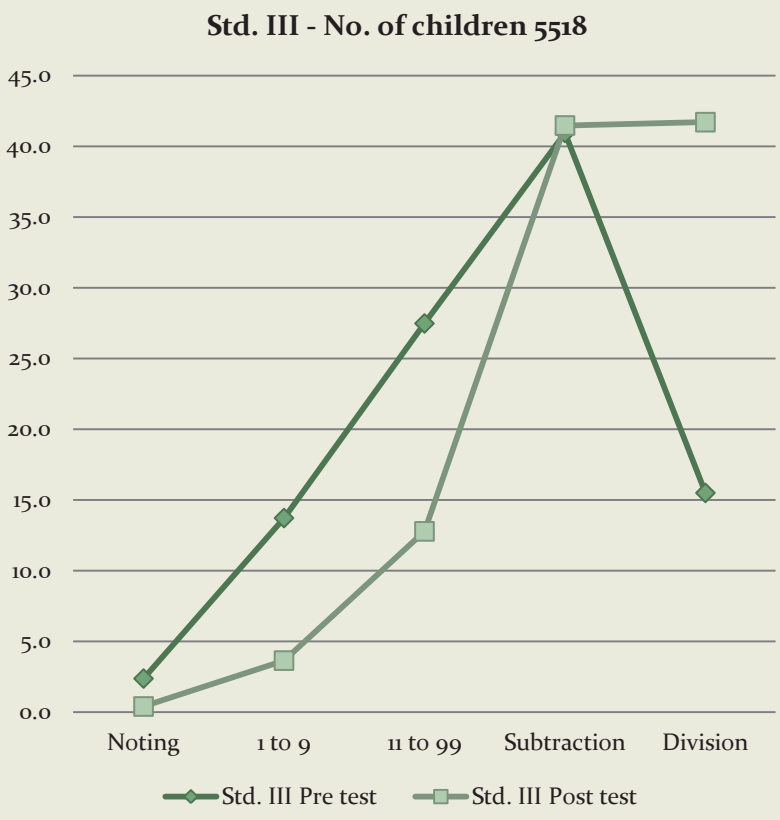
Other Innovations

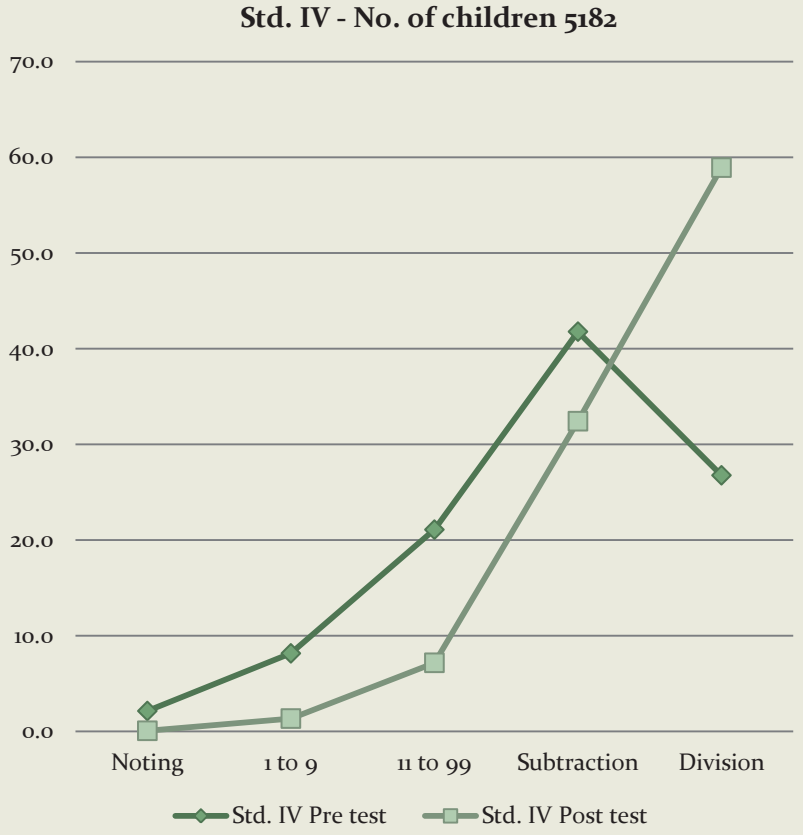


1. CAMaL – Combined activities for maximized learning
   - From LSRW to LSDRW
     - Effective listening
     - Opportunity to speak
     - Think and write
     - Freedom to use informal or colloquial language
2. Learning Camps
   - Another J-PAL randomized evaluation of 2008-10 showed
     - Grouping according to learning levels
     - Focused work to improve reading/mathematics
     - Integration of learning from CAMaL

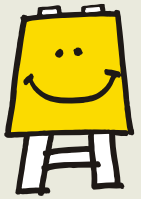
Outcomes of learning camp







In conclusion



- There are no ultimate truths.
- Most methods used with individual attention to the child and by letting the child explore and learn, work. The problem is that when these things are done on a large scale, the equation changes with circumstances.
- The purity of what works on small scale may not be sustained on a large scale in a semi-literate or largely illiterate country.
- Methods that help ordinary people make changes in small steps and to build upon them to make bigger changes are useful.